General

Guideline Title

Best practices & practice guidelines.

Bibliographic Source(s)

Harrison DD, Siskin LA, Betz JW, editor(s). Best practices & practice guidelines. Arlington (VA): International Chiropractors Association (ICA); 2013 Nov 22. 856 p. [12,534 references]

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: Harrison DD, Siskin LA, editor(s). Best practices & practice guidelines. Arlington (VA): International Chiropractors Association (ICA); 2008. 640 p.

Recommendations

Major Recommendations

Note from the International Chiropractors Association (ICA): A complete summary of the rating of the evidence for chiropractic care for over 300 health conditions is provided in Chapter 10 of the original guideline document.

Frequency and Duration of Care Recommendations

Frequency and Duration Programs to Be Presented

I. Uncomplicated Mechanical Axial Pain from Randomized Controlled Trials (RCTs)
II. Slowly Recovering Patients with Axial Pain (Dose-Response)
III. Axial Pain with Complicating Factors
IV. Headaches
V. Geriatrics: USA Medicare Laws as a Standard
VI. Motor Vehicle Accidents
VII. Trauma Patients (Workers Compensation, Home and Recreational Injuries)
VIII. Pediatrics
IX. Structural Rehabilitation of Subluxation (Upper Cervical, Posture, Sagittal Curves)
X. Wellness, Maintenance, Stabilization Care (Subluxation Correction, Diet, Exercise, Mental Health, Social Wellbeing)

I. Frequency and Duration of Chiropractic Care for Uncomplicated Axial Pain

Number of Visits Necessary to Resolve Uncomplicated Mechanical Axial Pain

While many claim axial pain should resolve in 6-12 spinal manipulative treatment (SMT) visits, the actual truth shows a much higher number of visits is necessary. Using the RCT data on the number of visits and improvement in pain scores in Table 3 of Chapter 11 in the original guideline document, a constant linear extrapolation can be used to determine a reasonable theoretical average number of visits/adjustments/treatments needed to completely resolve simple mechanical axial pain:

Estimated Care (EC) = (average visits)(100%)/(% of average improvement) (Equation 1)
= 11.4(100)/53
= 22 visits

Instead of releasing a patient as soon as he/she has reached some expected amount of improvement, the patient should be monitored for a few weeks to insure that relapses do not occur (stabilization care). ICA suggested a conservative 4 weeks at one visit per week herein for stabilization care after initial symptomatic improvement has been achieved. While equation (1) provides an estimated number of chiropractic visits to resolve simple mechanical axial pain, it does not include stabilization care or examinations. All RCTs have an initial examination visit before randomization and have multiple follow-up examinations not included in reports of actual treatment. If only the minimum number of follow-up examinations (follow-up after intensive care program and follow-up after 4 weeks of stabilization care) are included, then equation (2) provides a reasonable theoretical total number of visits for documentation, resolution, and stabilization of simple low back pain:

Total SMT Visits = 1 examination + EC + stabilization care + 2 follow-up visits (Equation 2)
= 1 + 22 + 4 + 2
= 29 visits

Basic Frequency and Duration Program for Uncomplicated Axial Pain

For the Frequency and Duration of uncomplicated Axial Pain, ICA divides data from the above Equations #1 and #2 into visits per week and total weeks. The initial examination and one of the follow-up examinations is added to the 29 visits in Equation #1, yielding 31 visits. These 31 visits could be provided as:

A. 5 visits per week for 6 weeks
B. 4 visits per week for 7.5 weeks
C. 3 visits per week for 10 weeks

After one of these pain resolution programs in either item A, or B, or C above is provided to a patient, the 1 visit per week for 4 weeks of stabilization care is provided with an additional follow-up visit at the end of the stabilization 4 week block. Thus, the Frequency and Duration program of care for Uncomplicated Axial Pain is one of the following schedules of Chiropractic care, either:

ICA Basic Frequency and Duration Program of Care #1

1.A. 5 visits per week for 6 weeks + 1 visit per week for 4 weeks + 1 follow-up exam visit (which is 35 visits in 10 weeks), or;

1.B. 4 visits per week for 7.5 weeks + 1 visit per week for 4 weeks + 1 follow-up exam visit (which is 35 visits in 12 weeks), or;

1.C. 3 visits per week for 10 weeks + 1 visit per week for 4 weeks + 1 follow-up exam visit (which is 35 visits in 14 weeks)

The above number of visits in specific time periods represents the "Basic" ICA Frequency and Duration Program of Care. It was derived from published pain data from RCTs and thus, it is purely evidence-based. This Basic ICA Frequency and Duration Program of Care will be altered as complicating factors in the individual patient are confronted. Complicating factor situations are analyzed in the remainder of this document. Note 1A, 1B, and 1C are equivalent choices of ICA's Basic Frequency and Duration Care Program #1.

What If the Patient Becomes Symptom Free in a Shorter Than Expected Time?

If a patient achieves complete resolution of pain in less than 29 SMT visits, then he/she would be placed on stabilization care for 4 weeks and provided follow-up examinations. For example, if the patient was symptom free after only 3 SMT visits, then his/her program of care would be: 1 examination +3 SMT visits + 4 stabilization visits in 4 weeks + 2 follow-up examinations = 10 visits; after which, he/she would be released from care.

II. Slowly Recovering Patients with Axial Pain (Dose-response)

Modifying the ICA's basic Frequency and Duration Care Program, depending solely on the patient's objective improvements, the frequency and

duration of care for slowly improving patients with uncomplicated axial pain would be:

For 1 extra block of 12 visits of care in 4 weeks

2.A. 5 visits per week for 6 weeks + 12 visits for 4 weeks + 1 visit per week for 4 weeks + 1 follow-up exam visit; (which is 47 visits in 14 weeks), or;

2.B. 4 visits per week for 7.5 weeks + 12 visits for 4 weeks + 1 visit per week for 4 weeks + 1 follow-up exam visit; (which is 46 visits in 27.5 weeks), or;

2.C. 3 visits per week for 10 weeks + 12 visits for 4 weeks + 1 visit per week for 4 weeks + 1 follow-up exam visit; (which is 47 visits in 30 weeks)

For 2 extra blocks of 12 visits of care in 4 weeks (24 visits in 8 weeks)

3.A. 5 visits per week for 6 weeks + 24 visits for 8 weeks + 1 visit per week for 4 weeks + 1 follow-up exam visit; (which is 59 visits in 18 weeks), or;

3.B. 4 visits per week for 7.5 weeks + 24 visits for 8 weeks + 1 visit per week for 4 weeks + 1 follow-up exam visit; (which is 59 visits in 19.5 weeks), or;

3.C. 3 visits per week for 10 weeks + 24 visits for 8 weeks + 1 visit per week for 4 weeks + 1 follow-up exam visit; (which is 59 visits in 22 weeks)

III. Axial Pain with Complicating Factors

Any complicating factors in a patient with axial pain will require a modification in the ICA's Basic Frequency and Duration Program of Care #1. When complicating factors are present, then the patient cannot be considered to have the easy, simple, uncomplicated, mechanical axial pain, and thus, the ICA's Basic Frequency and Duration Care Program (items #1A, 1B, or 1C) discussed above will not be sufficient to resolve the patients' conditions. Table 7 of Chapter 11 in the original guideline document provides a list of complicating factors, which are not limited to this list, that may affect the frequency and duration of chiropractic care required to resolve the patients' conditions or to reach maximum medical/chiropractic improvement (MMI).

When complicating factors are present in individuals with axial pain, the ICA Frequency and Duration Care Programs #2 or #3 will be recommended. The determination of which exact Program of Care will be most appropriate will depend on the follow-up examinations, during which, pain scales, range of motion, and activities of daily living are assessed. If Numerical Rating Scale (NRS) >1.0 and/or range of motion is still below normal limits and/or activities of daily living are still restricted, then an additional block of care consisting of 3 visits per week for 4 more weeks should be provided to these patients. Therefore, depending on the complicating factors, it might be necessary to provide 1, 2, 3, 4 or even 5 extra blocks of care consisting of 3 visits per week for 4 more weeks:

For 3 extra blocks of 12 visits of care in 4 weeks (36 visits in 12 weeks)

4.A. 5 visits per week for 6 weeks + 36 visits for 12 weeks + 1 visit per week for 4 weeks + 1 follow-up exam visit; (which is 71 visits in 22 weeks), or;

4.B. 4 visits per week for 7.5 weeks + 36 visits for 12 weeks + 1 visit per week for 4 weeks + 1 follow-up exam visit; (which is 71 visits in 23.5 weeks), or;

4.C. 3 visits per week for 10 weeks + 36 visits for 12 weeks + 1 visit per week for 4 weeks + 1 follow-up exam visit; (which is 71 visits in 26 weeks)

For 4 extra blocks of 12 visits of care in 4 weeks (48 visits in 16 weeks)

5.A. 5 visits per week for 6 weeks + 48 visits for 16 weeks + 1 visit per week for 4 weeks + 1 follow-up exam visit; (which is 83 visits in 26 weeks), or;

5.B. 4 visits per week for 7.5 weeks + 48 visits for 16 weeks + 1 visit per week for 4 weeks + 1 follow-up exam visit; (which is 83 visits in 27.5 weeks), or;

5.C. 3 visits per week for 10 weeks + 48 visits for 16 weeks + 1 visit per week for 4 weeks + 1 follow-up exam visit; (which is 83 visits in 30 weeks)

For 5 extra blocks of 12 visits of care in 4 weeks (60 visits in 20 weeks)

6.A. 5 visits per week for 6 weeks + 60 visits for 20 weeks + 1 visit per week for 4 weeks + 1 follow-up exam visit; (which is 95 visits in 25 weeks), or;

6.B. 4 visits per week for 7.5 weeks + 60 visits for 20 weeks + 1 visit per week for 4 weeks + 1 follow-up exam visit; (which is 95 visits in 31.5 weeks), or;

6.C. 3 visits per week for 10 weeks + 60 visits for 20 weeks + 1 visit per week for 4 weeks + 1 follow-up exam visit; (which is 95 visits in 34 weeks)

Again ICA reminds the reader that Care Programs 4A, 4B, and 4C are equivalent, as are 5A, 5B, and 5C, and 6A, 6B, and 6C are equivalent. At this point, ICA must remind the reader that there is no reliable way to predict which of the ICA's Frequency and Duration Care Programs (#1-#6) will be necessary in any one individual case when complicating factors are present. The determination of which program of care, #1-#6, will be necessary, is solely dependent upon the individual's progress at the follow-up examinations.

IV. Headaches

While headaches were included in the data in Table 2 of Chapter 11 in the original guideline document, ICA has included these symptoms separately here due to the fact that RCTs with SMT treatment for headache conditions show a slower dose-response compared to the other axial pain regions. Table 8 of Chapter 11 in the original guideline document provides the data to support the statement. From Table 8, ICA derives the constant linear extrapolation of visits for headaches.

Estimated Care (EC) = (average visit)(100%)/(% of average improvement)
= (10.8)(100%)/(39.7%)
≈27 visits

Using the initial examination visit, 4 once per week stabilization visits, and two follow-up visits in Equation #2, 30 visits are needed to examine, treat, stabilize, document, and follow-up on patients with headaches, neck pain, cervico-brachial pain, and/or upper back pain:

Total Visits = 1 examination visit + EC + stabilization care + 2 follow-up visits
= 1+ 27 + 4 + 2
= 34 visits

V. Geriatrics: USA Medicare Laws as a Standard

In general, Medicare aged patients have numerous complications (refer to Table 7 of Chapter 11 in the original guideline document) due to chronic pain, spinal degeneration, co-morbidity, and various traumas accumulated in their lifetimes. Thus, generally, Medicare patients with pain will have several of the complicating factors in Table 7 and will need more than the initial ICA Program of Care #1 to resolve their pain or reach MMI.

VI. Motor Vehicle Accidents (MVAs)

The ICA decided to use the long-established Croft Cervical Acceleration/Deceleration (CAD) Guidelines for its basic Frequency and Duration Programs of Care for MVA victims.

When developing his guidelines, Croft incorporated the stages of tissue repair. Since cervical spine tissues are injured in MVAs, this is a logical foundation. Depending on the injury site and how many spinal tissues are injured in a MVA, there be will alterations in the time of repair after a cervical spine injury. While there are reports of many tissues injured in MVAs, Bogduk has reported that approximately 50% of the cervical pain comes from injured facets and 25% comes from injured cervical discs. The stages of injury repair are defined in Table 14 of Chapter 11 in the original guideline document. In MVAs, Croft originated 5 grades of injury during CAD and these Grades have been universally accepted in the literature (see table below).

Croft's Grades of Injury		
Grades	Severity	Anatomical and Clinical Description
I	Minimal	No limitation of range of motion, no ligamentous injury, no neurological symptoms
II	Slight	Limitation of range of motion, no ligamentous injury, no neurological findings
III	Moderate	Limitation of range of motion, some ligamentous injury, neurological findings present

Croft's Grades of Injury		
Grades	Severity	Anatomical and Clinical Description
IV	Moderate to severe	Limitation of range of motion, ligamentous instability, neurological findings present, fracture or disc derangement
V	Severe	Requires surgical treatment and stabilization

Croft Frequency and Duration Table

The table below details the Croft treatment recommendations. In the seventh and eighth right hand columns are the approximate maximum treatment duration and the approximate maximum number of visits expected to be necessary over that period. In the last column, Croft's Frequency and Duration schedules are correlated with the ICA's 6 Programs of Care. Croft stated that patients not at high risk for poor outcome should not require treatment approaching these maxima.

Grade	Daily	3x/wk	2x/wk	1x/wk	1x/mo	Duration	# Visits	ICA Equivalent
Grade I	1 wk	1-2 wk	2-3 wk	>4 wk	---	>10 wk	>21	#1C
Grade II	1 wk	>4 wk	>4 wk	>4 wk	>4 mo	>29 wk	>33	#2C
Grade III	1-2 wk	>10 wk	>10 wk	>10 wk	>6 mo	>56 wk	>76	#6C
Grade IV	2-3 wk	>16 wk	>12 wk	>20 wk	**	**	**	
Grade V	Surgical stabilization necessary — chiropractic care is post surgical							

**May require permanent monthly or permanent palliative care.

Croft provided several complicating factors that might influence the frequency and duration of care to be a maximum. Most of Croft's complicating factors for CAD victims are included in the ICA Table 7 (see Chapter 11 in original guideline document). These Croft complicating factors are listed in Table 17, Chapter 11 in the original guideline.

Open-ended Frequency and Duration for Grade IV Subjects

ICA will adopt/adapt the Croft Guidelines for Frequency and Duration of Care for subjects with injury Grades I, II, and III (see Table 12, Chapter 11 in the original guideline document). However, because of the open-ended extended Frequency and Duration program recommended by Croft for Grade IV CAD injured subjects, ICA has formulated a Program of Care #7 for these Grade IV subjects:

For 6 extra blocks of 12 visits of care in each 4 week period (72 visits in 24 weeks) + 20 weeks at 1 visit per week +12 months at 1 visit per month

7.A. 5 visits per week for 4 weeks + 72 visits for 24 weeks + 1 visit per week for 4 weeks + 1 follow-up exam visit after each 4 week block + 20 visits in 20 weeks + 12 visits in 12 months (which is 142 visits in 2 years), or

7.B. 4 visits per week for 5 weeks + 72 visits for 24 weeks + 1 visit per week for 4 weeks + 1 follow-up exam visit after each 4 week block + 20 visits in 20 weeks + 12 visits in 12 months (which is 142 visits in 2 years), or

7.C. 3 visits per week for 7 weeks + 72 visits for 24 weeks + 1 visit per week for 4 weeks + 1 follow-up exam visit after each 4 week block + 20 visits in 20 weeks + 12 visits in 12 months (which is 142 visits in 2 years)

Note: For Grade IV subjects, an evaluation including numerical pain scale, range of motion, x-ray, and activities of daily living (such as SF36) should be performed periodically (such as every 3 months) in order to document the patient's condition and the need for ongoing open-ended care.

VII. Trauma Patients: Workers Compensation

Refer to Chapter 11 in the original guideline document for information regarding Workers Compensation Frequency and Duration Programs. While a few states have nearly identical Workers Compensation guidelines for chiropractors, most states have quite different Guidelines.

VIII. Pediatrics

Table 32 in Chapter 11 in the original guideline document summarizes the ICA Best Practices data for pediatrics.

Note: Even though the Level 1 studies are included, when the patient has not reached MMI, which data were collected at an arbitrary cut off

number of visits, the average frequency and duration is 20 visits in 20 weeks. This is nearly equivalent to the ICA Frequency and Duration Program of Care #1, except the pediatric patient is followed up for 20 weeks instead of the maximum of 11 weeks in the ICA Program #1.

IX. Functional and Structural Rehabilitation of Subluxation

The ICA Guideline Committee had difficulty finding any frequency and duration parameters for rehabilitation. The Web sites of physiatrists, physical therapists (PTs), occupational therapists (OTs), and chiropractors were searched. The only frequency and duration recommendations were found from the Reed Group. Table 33, Chapter 11, in the original guideline document summaries the Reed Group's Frequency and Duration suggestions for a few conditions. The original guideline also presents tables of common therapeutic exercises (Table 34), physical therapy prescriptions for musculoskeletal injury based on healing phase (Table 35), and the Chiropractic Rehabilitation Association's protocols for active resistive exercises (Table 36).

X. Wellness, Maintenance, Stabilization Care

While it seems quite logical that proper diet, strength exercises, aerobic exercise, routine chiropractic care, proper positive mental attitude, and social wellbeing are essential to have a full and long life span, there are many theories with promising evidence-based support, but very few long term studies to cite. While most healthcare providers believe some of these items to be essential, the ICA Guideline Committee awaits the publication of such studies.

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

- Uncomplicated axial pain (mechanical neck pain or mechanical back pain)
- Axial subluxation
- Axial pain with complicating factors
- Headaches
- Trauma
- Whiplash injuries

Note: For a complete list of the diseases and conditions reviewed, along with their corresponding levels of supporting evidence, see Tables 1A to 1I in Chapter 10 in the original guideline document.

Guideline Category

Evaluation

Management

Rehabilitation

Treatment

Clinical Specialty

Chiropractic

Geriatrics

Pediatrics

Physical Medicine and Rehabilitation

Intended Users

Chiropractors

Health Care Providers

Health Plans

Managed Care Organizations

Public Health Departments

Utilization Management

Guideline Objective(s)

- To locate, summarize, categorize, evaluate, and rate the evidence for chiropractic care of a variety of health conditions
- To assist the practicing chiropractor in making sound, fundamental, clinical decisions when providing chiropractic care in clinical practice
- To provide chiropractic colleges and educational institutions with a document to help assist future chiropractic practitioners in the criterion standard of care

Target Population

Individuals seeking chiropractic care

Interventions and Practices Considered

Spinal manipulation therapy (SMT) (frequency and duration)

Major Outcomes Considered

- Perceived pain, disability, and/or functional status
- Pain threshold/tolerance
- Posture
- Range of motion
- Muscle strength
- Muscle endurance
- Muscle spasm
- Nerve function

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

Searching for the Evidence

For the beginning searches for evidence of chiropractic care, all levels of evidence (Levels 1, 2, 3, and 4) were included in computer searches for the time period January 2008 - November 2013. It was the goal to locate every original clinical study involving patients receiving chiropractic care. For additional studies, the guideline developer's representative worked closely with the Palmer College of Chiropractic librarians to search by hand all recent and old text books, recent and old journals, and chiropractic newsletters. Since systematic reviews and meta-analyses are not original patient studies, these were located and included in the data base, but not rated.

The Chiropractic, Orthopedic, Physical Medicine, Osteopathic, Physical Therapy, and Manual Medicine fields were searched using the following citation indices:

Search Indices/Engines Used for Data Collection

1. PubMed through Medline
2. MANTIS http://www.healthindex.com/
3. The Index to Chiropractic Literature http://www.chiroindex.org/#results
4. Google's beta version of their "scientific" search engine available for free use: http://www.scholar.google.com
5. Chiropractic technique texts
6. Hand searches at the Palmer College of Chiropractic Library of chiropractic magazines, journals, and newspapers
7. Hand searches of Chiropractic Research Conference Proceedings

Search Topics and Key Word Search

The search topics included the following:

1. Chiropractic
2. Chiropractic Adjustment
3. Chiropractic Manipulation
4. Spinal Manipulation
5. Spinal Manipulative Therapy
6. Manipulation
7. Chiropractic Case Study
8. Chiropractic Case Report
9. Chiropractic Clinical Study
10. Randomized Clinical Trial
11. Nonrandomized Clinical Trial
12. Clinical Control Trial
13. Cohort Study
14. Case Series
15. Chiropractic Observational Studies

Study Inclusion Criteria for Guideline Analysis and Production

Studies were included if they fit the following criteria:

1. Original chiropractic study with patient outcomes (systematic reviews and meta-analyses were not included in the rating of studies)
2. Chiropractic source, which included spinal manipulation or spinal adjustment:
    a. Any technique system or chiropractic technique text book
    b. Any journal article which included a clinical study with any of the key words listed above
3. Physical Medicine, Osteopathic, Physical Therapy, and Manual Medicine care which included any of the key words listed above

Journals and Texts Searched by Hand (Besides Index Searches)

Chiropractic texts were searched by hand for clinical studies. Additionally, due to the fact that some journals, depending on their date of publication, may not have had adequate key words, journals were hand searched for chiropractic clinical studies that may have been missed during computer searches. To be thorough without redundancy over the search period of 2.5 months, lists were made of the journals that were hand

searched. This list is provided in Table 1, Chapter 8 in the original guideline document.

Frequency and Duration of Chiropractic Care for Uncomplicated Axial Pain

In the International Chiropractors Association (ICA) Best Practices data base in Chapter 10 in the original guideline document, the guideline authors identified 160 randomized controlled trials (RCTs) on low back pain, upper back pain, neck pain, and headaches.

From searches in PubMed, CINAHL, MANTIS, and the Index of Chiropractic Literature, these 160 RCTs on axial pain were found and entered into the ICA data base. Key words searched were spinal manipulative therapy, spinal manipulation, manipulation, mobilization, chiropractic technique, randomized clinical trials (RCTs), low back pain, acute low back pain, sub-acute low back pain, chronic low back pain, acute neck pain, sub-acute neck pain, chronic neck pain, cervicogenic pain, and headaches (including migraine).

Number of Source Documents

Not stated

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Levels of Evidence

Level 1. Randomized controlled trials—includes quasi-randomized processes such as alternate allocation

Level 2. Non-randomized controlled trial—a prospective (pre-planned) study, with predetermined eligibility criteria and outcome measures

Level 3. Observational studies with controls—includes retrospective, interrupted time series (a change in trend attributable to the intervention), case-control studies, cohort studies with controls, and health services research that includes adjustment for likely confounding variables

Level 4. Observational studies without controls (e.g., cohort studies without controls, case series without controls, and case studies without controls)

International Chiropractors Association (ICA) Rating of the Evidence

Scale	Description
A	Well supported by clinical evidence of either: 1. At least two positive randomized controlled trials (RCTs) OR 2. One RCT & one non-randomized controlled trial (NRCT) with positive results OR 3. One RCT and RCT equivalent ≥7.0
B	Supported by clinical evidence of either: 1. One good-quality positive RCT OR 2. One NRCT with good results and 2.1 ≤ RCT equivalent ≤6.9 OR 3. RCT equivalent ≥7.0
C	Supported by clinical evidence of • 2.1 ≤ RCT equivalent ≤6.9
D	Supported by clinical evidence of one or more Level 2 to 4 studies:

Scale	Description
	• 0.1 ≤ RCT equivalent ≤2.0

Methods Used to Analyze the Evidence

Meta-Analysis of Randomized Controlled Trials

Review of Published Meta-Analyses

Systematic Review with Evidence Tables

Description of the Methods Used to Analyze the Evidence

Critically Appraising the Evidence (Rating of Evidence)

While there are numerous published articles, systematic reviews, or meta-analyses, with different rating methods of Level 1 evidence (randomized controlled trials [RCTs]) on spinal manipulative therapy (SMT), to the best of the guideline developers' knowledge, only two publications that rate Level 2 to 4 studies were found.

Usually, the rating methods of Level 1 (RCTs) studies do not apply to Levels 2 to 4 studies, and especially do not apply to observational studies (Levels 3 and 4). Empirical research has shown that quality scores (which are numeric scores based on arbitrary weights given to each item in a scale) are arbitrary, unreliable, biased, and hard to interpret. Instead of quality scores for observational studies, Juni et al suggested that a check list be used in which rating is done by whether an item is present or not present, such as "met, partially met, not met."* This is the same recommendation made in a consensus statement by the Meta-analysis Of Observational Studies in Epidemiology (MOOSE) Group published in JAMA in 2000.

In this document, the guideline authors decided to follow many of Juni's suggestions for rating observational studies and RCTs. By giving a point for each important item that is present in a particular study, a rating method which is not biased can be performed. Instead of having committee meetings to have all members read and rate clinical studies by arbitrary weights in a scale, the International Chiropractors Association (ICA) Committee met and had consensus on items that, when present, provide details necessary to determine exactly:

1. What the patient population was
2. What was done in the methods
3. What outcomes were reported in order that a study may be exactly replicated by any future study

A data base was engineered in File Maker Pro that contained questions for the reader/rater (ICA Best Practices Committee Member) of clinical studies (Level 1 to 4 publications) to answer. A point was assigned to items if they were present in the study. These were broken into five categories:

1. Research design
2. Subject characteristics
3. Type of intervention
4. Frequency and duration
5. Care outcomes

*Juni P, Witschi A, Bloch R, Egger M. The hazards of scoring the quality of clinical trials for meta-analysis. JAMA. 1999 Sep 15;282(11):1054-60.

Elimination of Bias with Criteria for Rating Articles

There is much bias possible when guideline committees vote on the ranking/rating of published studies. To eliminate this possible bias, the ICA Best Practices & Practice Guidelines (BPPG) Executive Committee met to determine what items, when present in manuscripts, are "essential" to reading, understanding, replicating, and extrapolating from a clinical study. For any clinical study (including a case study), the items in Table 2, Chapter 8 in the original guideline document, if appropriate for that type of study, are needed.

A database and computer program in File Maker Pro was written to collect data and rate each article. After the articles were read by Committee members, said individuals entered data into the program from the articles. If *essential* data were entered by a Committee member, then the

computer program assigned points to the manuscript by how many *essential* items were present. Thus, the rating of articles was not by voting, but rather by if an article provided *essential* information.

Grading the Evidence

A modification of Harbour and Miller was chosen for the ICA rating system. Harbour and Miller had modified the grading system reported by the Agency for Healthcare Research and Quality (AHRQ). The ICA system for grading the evidence is summarized in the "Rating Scheme for the Strength of the Evidence" field.

Since the results of well done case studies have been consistent with the results of RCTs, it was decided to derive a rating method based on RCTs and case studies. In the ICA's computer program for entering data from clinical papers, points were awarded according to Table 2, Chapter 8 in the original guideline document. Twenty-five is the maximum possible points for a manuscript to attain and this is very difficult to achieve. The average RCT in the ICA data base received 16 points.

To derive a rating scale A to D, it was decided to divide the total points for any health condition by 16 points, termed the RCT equivalent. If two RCTs were performed on a certain health condition or if there was one RCT and the RCT equivalent (total of Level 2-4 evidence divided by 16) is equal to or higher than 7.0, then ICA has determined that this health condition is well supported by clinical evidence.

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

International Chiropractors Association Best Practices & Practice Guidelines (ICA-BPPG) Guideline Development and Evaluation Process

Executive Committee

The ICA-BPPG Committee was composed of 37 ICA members, of which there were 7 principal investigators. Committee members were chosen based on their membership in the ICA, their chiropractic clinical practice experience, their position as educational experts in the chiropractic profession, and/or their research publication experience in the chiropractic sciences.

The principal investigators met over the internet, performed preliminary literature searches on Levels of Evidence, performed searches on the Rating of Evidence, and outlined the data base, in which Committee members entered their summaries of each clinical study and the particulars of the methods and results of each individual clinical study.

The 7 principal investigators then asked for ICA member volunteers to miss practice time to travel to Evanston, Wyoming; Saugus, Massachusetts; Newark, New Jersey; and Annapolis, Maryland to attend Committee meetings where published clinical studies were scanned, read, rated, and referenced.

The ICA-BPPG Executive Committee, together with ICA staff members, wrote the initial guideline draft.

Committee Meeting Structure

Initial work to compile research data for the guidelines was obtained intensively through the years 2006-2007 and committee and research review meetings were held by volunteers thereafter 1-2 times per year with each research review meeting bringing additional practicing chiropractors to read and rate research articles through 2011. Research review slowed for the years 2012-2013 for the purpose of updating content of the document itself and to integrate contemporary research findings to this work. Moving forward meetings will continue 1-2 times per year for the purpose of continuing to integrate newly published research and any omitted research to the data pool for these guidelines to represent the most contemporary information related to the practice and principle of chiropractic.

Writing of the Draft

The ICA-BPPG Executive Committee, together with ICA staff members, wrote the initial Guideline draft.

2013 Update

Between its original publication in 2008 and the current 2013 update of this guideline many resources for guideline development have surfaced. Notably, the Appraisal of Guidelines Research and Evaluation (AGREE) Next Steps Consortium leading to the AGREE II Instrument as well as

the U.S. Institute of Medicine's (IOM) Clinical Practice Guidelines We Can Trust documents were published in 2010 and 2011. Following thorough discussion and review of these new resources, it was concluded through executive committee consensus that this guideline document, by following its original design, meets the expectations of the AGREE II and IOM recommendations and/or formats. Therefore the 2013 update of the ICA Best Practices and Practice Guidelines followed its original methodology, as described in introductory Chapters 1 and 5 in the original guideline document. All tables and figures throughout the document have been updated accordingly.

Rating Scheme for the Strength of the Recommendations

Not applicable

Cost Analysis

Cost analyses were reviewed. Refer to Chapter 5, "Cost of Chiropractic Compared to Medical Care," in the original guideline document for additional information.

Method of Guideline Validation

External Peer Review

Internal Peer Review

Description of Method of Guideline Validation

Writing of the Draft, Internal Review

The International Chiropractors Association Best Practices & Practice Guidelines (ICA-BPPG) Executive Committee, together with ICA staff members, wrote the initial Guideline draft. Upon completion of the initial draft, all ICA Committee members were asked to review the document in its entirety and complete a review form (see Appendix 1 of the original guideline document). All Committee review forms were then analyzed by the Chair and the ICA-BPPG Executive Committee and the Guideline draft was revised accordingly.

Following this revision, the Committee members who had criticisms of the initial ICA-BPPG draft were then asked to review the document again and complete a second review form (see Appendix 1 in the original guideline document). Thus, the ICA-BPPG was subjected to two internal consensus reviews.

External Review

Following the two ICA-BPPG Committee draft reviews, the document was sent out for four phases of External Review. These four phases included:

Phase I: The ICA-BPPG was sent to a panel of 9 International Chiropractic experts. These 9 members were independent of the ICA-BPPG panel and were from the United States, Canada, Ireland, Great Britain, and Australia. The stipulation was that these individuals had to be involved in one of the following areas: clinical research and private practice, chiropractic education at a Council on Chiropractic Education (CCE)-accredited chiropractic college or university, hold a secondary JD (law) degree in addition to their Doctor of Chiropractic (DC) degree, editor in chief of a peer-reviewed indexed chiropractic research journal, and be in active clinical practice and actively involved in a major chiropractic "political" organization. These individual chiropractic experts were asked to review and evaluate the ICA-BPPG with the Appraisal of Guidelines Research and Evaluation (AGREE) Instrument.

Phase II: A second set of independent chiropractic experts were sent the ICA-BPPG draft at the same time as those in Phase I. This second set of experts consisted of chiropractors who simultaneously held medical degrees. The stipulation was that the individual had to have been in active chiropractic clinical practice for at least 5 years prior to attaining their medical degree and switching their focus to active medical clinical practice. Three experts that fit these criteria were identified. These three experts were asked to review and evaluate the ICA-BPPG with the AGREE Instrument.

Phase III: At the same time as Phases I and II, the ICA-BPPG were sent to the major chiropractic political organizations for their review. These political organizations included:

1. The International Chiropractors Association (ICA)
2. The World Chiropractic Alliance (WCA)
3. The American Chiropractic Association
4. The Canadian Chiropractic Association (CCA)
5. The Chiropractic Association of Australia (CAA)
6. The Chiropractic Association of Ireland (CAI)
7. The World Federation of Chiropractic (WFC)
8. The British Chiropractic Association (BCA)
9. The Federation of Straight Chiropractors and Organizations (FSCO)
10. The New Zealand Chiropractic Association

These 11 chiropractic political organizations were asked to review and evaluate the ICA-BPPG with the AGREE Instrument.

Phase IV: Following Phases I to III, a website was set up (at www.chiropractic.org) where the guidelines were posted and open for review from the Chiropractic profession at large. The evaluation instrument in Appendix 1 in the original guideline document was posted on the website and willing participants from the profession completed this form.

Discussion of Review Process

In each of the four phases of ICA-BPPG review and evaluation, the "evaluators" were given 4 weeks to complete their reviews. Following the completion of Phases I to III of the external review process, the 7 principal investigators of the ICA-BPPG evaluated all the submitted reviews. The validity and applicability of the comments/criticisms was evaluated using the AGREE Instrument and a consensus of at least 4/7 (a majority) of principal investigators was needed prior to altering/revising the draft of the ICA-BPPG document. This was the third draft of the document.

The fourth and final revision of the ICA-BPPG occurred following the comments from the chiropractic profession at large in Phase IV. The validity and applicability of the comments/criticisms was evaluated by the 7 principal investigators and a consensus of at least 4/7 (a majority) of principal investigators was needed prior to altering/revising the draft of the ICA-BPPG document. Thus, the ICA-BPPG underwent 4 primary draft revisions. This final draft is the completed version of the ICA-BPPG.

The updated draft submitted in 2013 contains updates in chapter content and research tables reflecting additional research reviewed since the release of the first final Guideline in 2008. Typographical errors were corrected in chapter 7 and chapter 5 was completely re-written to reflect the most contemporary available data. Chapter 10 revised each table line item and its references based on the updated and current ICABPPG research database which is a live and dynamic document.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

All levels of evidence (levels 1 to 4) for all conditions reported in the chiropractic literature were included in the summary Tables 1A to 1I in Chapter 10 in the original guideline document and are evidence based.

The programs of frequency and duration summarized in Chapter 11 in the original guideline document were based on pain data from 128 randomized controlled trials (RCTs) and are evidence based.

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

By following the International Chiropractors Association-Best Practices & Practice Guidelines (ICA-BPPG) Guidelines, it is expected that the Doctor of Chiropractic will follow a reasonable course of action based on the best available knowledge. It is expected that with the assistance of the ICA-BPPG Guidelines, the Doctor of Chiropractic will use the assessment and care of spinal subluxation suggested herein to deliver safe and effective chiropractic care.

Potential Harms

While the chiropractic adjustment has been implicated in a variety of potential side-effects, there is inadequate evidence that any perceived risk outweighs the likely benefit of the procedure. Biomechanical data demonstrates that it is unlikely that the adjustive force could damage a spinal disc. While the concept of a cervical spine manipulation causing a cerebrovascular accident has been discussed in the literature in case reports and physiological studies, more recent information demonstrates that the likelihood of such an event in lower than ever thought before. Significant adverse events from chiropractic adjustments are rare. It is likely that many patients present to the chiropractors office with the implicated side-effects as a pre-existing conditions that went undetected and/or unexplained to the patient.

See Chapter 4 in the original guideline document for a full review of the risks of chiropractic care.

Contraindications

Contraindications

Critical to the discussion of pre-existing disc herniations is the fact that chiropractic manipulation is actually the standard of care for patients who have cervical disc herniations. In the Mercy Center Guidelines, it is stated that manipulation is only contraindicated in the case of "extensive disc prolapse with evidence of severe nerve damage."

Qualifying Statements

Qualifying Statements

- While no guideline can replace the clinical decisions made by a chiropractic practitioner in the course of caring for an individual patient's health problem, the suggestions contained herein are based on the best available published evidence. Any approach by a practitioner that is different from these International Chiropractors Association-Best Practices & Practice Guidelines (ICA-BPPG) Guidelines does not necessarily mean that the approach in question was below the standard of care. However, any chiropractic practitioner who adopts a course of action different from these ICA-BPPG Guidelines is advised to keep sufficient patient records to explain why such an action was undertaken.
- Chiropractic is a philosophy, a science, and an art. The nature of a science is that it is constantly evolving. Due to the variety, complexity, severity, and intricacy of human health conditions it is impossible to always determine the appropriate examination, appropriate diagnostic analyses, and to predict with absolute certainty the patient's response to chiropractic spinal care. Therefore, adherence to these ICA-BPPG Guidelines will not always ensure that an accurate assessment and care of the patient's spinal health has occurred, but adherence to these ICA-BPPG Guidelines will assist the practitioner by allowing him to practice based on the most current scientific data available. However, to do so without also combining it with all the knowledge and skills of a doctor of chiropractic may result in an inaccurate assessment and care of the patient. By following the ICA-BPPG Guidelines, it is expected that the chiropractic practitioner will follow a reasonable course of action based on the best available knowledge. It is expected that with the assistance of the ICA-BPPG Guidelines, the chiropractic practitioner will use the assessment and care of spinal subluxation suggested herein to deliver safe and effective chiropractic care.
- Because some chiropractors (such as college academics and paid consultants for 3rd party payers) may not be treating individual patients, they may neglect to consider the arbitrary 6-12 visit recommendation of many third party payers does not work in actual clinical practice when it comes to fully alleviating pain in the average patient with a simple case. This makes sense when one evaluates randomized control trial (RCT) pain data which suggests only about 53% symptom improvement in 11.4 visits. Most agree patients should have the right to achieve pain resolution or to reach maximum medical improvement (MMI). It is the health care provider's obligation to render the best possible care based on current evidence and patients' unique individual presentation.

Implementation of the Guideline

Description of Implementation Strategy

Presentation

As with any new suggested guidelines, there is the need to present all relevant updates and modifications to the groups who actually reviewed them. In this case, it is the members of the International Chiropractors Association (ICA) in particular and the whole chiropractic community in general. To accomplish this presentation of the ICA Best Practices & Practice Guidelines, the Guidelines Committee will start by redistributing access to:

1. The ICA Board members
2. The ICA State Representatives members
3. All state and provincial boards
4. All state and provincial associations
5. All foreign boards
6. All foreign associations
7. All chiropractic colleges' academic deans, clinic directors, and presidents world-wide

The first version of this guideline was distributed to each of the bodies mentioned above between the years 2007-2012. Presentation and general dissemination was thorough and remains a continual process, due to the turnover of leadership within each entity. With this 2012/13 update mass redistribution will be performed once again. Additionally, press releases announcing the updated guidelines with web access will be sent to as many chiropractic outlets as possible.

Implementation

The ICA Guidelines Committee continues to have confidence that most members of the ICA already practice close to these guidelines. They also strongly believe that the majority of non-ICA member Doctors of Chiropractic practice very similar to these guidelines as well. They believe this because by following ICA methodology they have included every clinical paper ever written by chiropractors, regardless of where it was published or the clinical methods described. Therefore this document is the most accurate representation of a broad cross section of clinical practice.

The ICA Guidelines Committee will focus once again on educating doctors on the benefits of implementing clinical practice guidelines. There remains an obvious disconnect between clinicians and research. The committee hopes to bridge that gap through continued dissemination and education efforts.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Living with Illness

IOM Domain

Effectiveness

Patient-centeredness

Identifying Information and Availability

Bibliographic Source(s)

Harrison DD, Siskin LA, Betz JW, editor(s). Best practices & practice guidelines. Arlington (VA): International Chiropractors Association (ICA); 2013 Nov 22. 856 p. [12,534 references]

Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2008 (revised 2013 Nov 22)

Guideline Developer(s)

International Chiropractors Association - Medical Specialty Society

Source(s) of Funding

International Chiropractors Association

Guideline Committee

International Chiropractors Association's Best Practices and Practice Guidelines (ICA-BPPG) Committee

Composition of Group That Authored the Guideline

Executive Committee Members: Donald D. Harrison, PhD, DC, MSE (*Original Chair, Deceased*); Leonard Siskin, BA, DC (*Vice-Chair*); Joseph W. Betz, BS, DC (*Committee-Chair*); Dwight DeGeorge, MS, DC; Deed E. Harrison, DC; Eric Huntington, DC; Joseph R. Ferrantelli, BS, DC

Committee Members: For the full list, see pages V-VIII in the original guideline document.

Financial Disclosures/Conflicts of Interest

Input from third party payers, government agencies, managed care organizations, and the like were not sought and not considered relevant. Involvement of chiropractic independent medical evaluators (IMEs) for insurance providers was a factor for exclusion on International Chiropractors Association Best Practices & Practice Guidelines (ICA-BPPG). Involvement from chiropractic technique leaders and individuals who teach continuing education conferences for licensure renewal in the chiropractic profession were not considered to be conflicts of interest because every clinical chiropractic study ever published was sought for review.

None of the ICA-BPPG Committee members received funding of any kind for their involvement in the ICA-BPPG Guidelines.

Possible Conflicts of Interest for Authors and Executive Committee for Best Practices & Practice Guidelines

Name	Active Clinical Practice: Years, Active or Inactive	IME: Yes/No	Chiropractic Research Investigator: # of Peer- Reviewed Publications	Chiropractic Technique Leader and/or CE Instructor	Reviewer for Any Peer-Reviewed Journal	Any Previous Guideline Panel Member
Authors and Executive Committee for Best Practices & Practice Guidelines						
Betz, J	12, Active	No	8	CBP Technique	None	PCCRP, ICA of California Guidelines on Whiplash Associated Disorders

Name	Active Clinical Practice: Years, Active or Inactive	IME: Yes/No	Chiropractic Research Investigator: # of Peer- Reviewed Publications	Chiropractic Technique Leader and/or CE Instructor	Reviewer for Any Peer-Reviewed Journal	Any Previous Guideline Panel Member
Clum, G	40, Inactive	No	4	No	None	Member, steering committee Mercy Guidelines, Conferee: Mercy Guidelines, Chair, Post-Conference Publications Committee: Mercy Guidelines
Colloca, C	18, Inactive	No	52	Impulse Adjusting Technique	9	None
Davis, C	27, Active	Yes	7	No	3	PCCRP, Management of Whiplash Associated Disorders
DeGeorge, D	27, Active	No	5	No	None	None
Ferrantelli, J	12, Active	No	5	No	None	PCCRP
Haas, J	12, Active	No	16	CBP Technique	None	PCCRP
Harrison, DE	16, Active	No	88	CBP Technique	6	PCCRP
Harrison, DD	14, Active; 18, Inactive	No	73	CBP Technique	None	PCCRP
Henderson, R*						
Huntington E	12, Inactive	No	0	No	None	None
Molyneux, E*						
Murphy, D	35, Active	No	1: 3 book chapters	No	None	None
Siskin, L	15, Active	No	1	No	None	PCCRP
Van Egmond, C						
Wiegand, A	6, Active	No	2	No	None	None

CBP = Chiropractic BioPhysics®; CE = chiropractic education; PCCRP = Practicing Chiropractors' Committee on Radiology Protocols

*Not a Doctor of Chiropractic

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: Harrison DD, Siskin LA, editor(s). Best practices & practice guidelines. Arlington (VA): International Chiropractors Association (ICA); 2008. 640 p.

Guideline Availability

Electronic copies: Available from the International Chiropractors Association (ICA) Web site .

Availability of Companion Documents

None available

Patient Resources

None available

NGC Status

This NGC summary was completed by ECRI Institute on June 7, 2010. The information was verified by the guideline developer on July 22, 2010. This summary was updated by ECRI Institute on April 11, 2014. The updated information was verified by the guideline developer on April 22, 2014.

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